

Supplementary material for: Cure Models as a Useful Statistical Tool for Analyzing Survival

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Supplementary material

For results with the Weibull mixture cure model we assumed the following survival model:

$$S(t) = \exp(\gamma'X)/(1 + \exp[\gamma'X]) + 1/(1 + \exp[\gamma X]) \exp(-[\exp\{\beta'Z\}t]^\lambda),$$

where X is a vector of covariates associated with the long-term survivor component of the model, Z is a vector of covariates associated with the short-term survival component of the model, γ and β are parameter vectors associated with X and Z , and λ is the shape parameter of the Weibull model. In this model both X and Z include an intercept term. X and Z may share some, none, or all covariates. In all models presented, we took $X = Z$.

For results with the Weibull non-mixture cure model we assumed the following survival model:

$$S(t) = \exp[-\exp(\alpha'W)(1 - [\exp\{\eta'Y\}t]^\kappa)],$$

where W is a vector of covariates associated with the long-term survivor component of the model, Y is a vector of covariates associated with the short-term survival component of the model, α and η are parameter vectors associated with W and Y , and κ is the shape parameter of the Weibull model. In this model both W and Y include an intercept term. W and Y may share some, none, or all covariates. In all models presented, we took $W = Y$.

For interested readers, the full results of Tables 2 and 3 on the coefficient scale (in contrast to the OR and HR scale) are provided below.

Table S.1: Weibull mixture cure model regression results

	Estimate	95% CI	P-value
Long-term survivor model coefficients			
Intercept	-0.66	(-1.91, 0.60)	0.303
TT1 (ref)			
TT2-	0.86	(0.57, 1.66)	0.036
TT2+	1.55	(0.80, 2.32)	<0.001
TT3	3.01	(2.21, 3.80)	<0.001
Age	-0.03	(-0.05, -0.005)	0.018
CA	-0.66	(-1.38,-0.35)	0.001
Short-term survival model coefficients			
Intercept	-1.65	(-2.21, -1.09)	<0.001
TT1 (ref)			
TT2-	-0.26	(-0.52, 0.003)	0.052
TT2+	-0.41	(-0.74, -0.07)	0.017
TT3	-0.08	(-0.66, 0.50)	0.78
Age	0.01	(-0.004, 0.02)	0.25
CA	0.34	(0.14, 0.55)	0.001
Shape	0.10	(0.02, 0.18)	0.011

Table S.2: Weibull non-mixture cure model regression results

	Estimate	95% CI	P-value
Long-term survivor model coefficients			
Intercept	0.16	(-0.77, 1.10)	0.74
TT1 (ref)			
TT2-	-0.16	(-0.72, 0.40)	0.57
TT2+	-0.70	(-1.17, -0.23)	0.003
TT3	-1.70	(-2.23, -1.18)	<0.001
Age	0.01	(-0.004, 0.03)	0.16
CA	0.41	(0.07, 0.76)	0.02
Short-term survival model coefficients)			
Intercept	-2.14	(-3.22, -1.07)	<0.001
TT1 (ref)			
TT2-	-0.33	(-0.94, 0.28)	0.29
TT2+	-0.12	(-0.67, 0.42)	0.66
TT3	0.54	(-0.10, 1.19)	0.10
Age	0.003	(-0.02, 0.02)	0.25
CA	0.17	(-0.23, 0.56)	0.40
Shape	0.18	(0.09, 0.26)	<0.001